REMARKS ON A RECENT PROPOSAL TO INTRODUCE OSTRICHES INTO TASMANIA.

By Jas. Andrew.

During last year a proposal was made to the Government to introduce Ostriches into Tasmania, following the example of what was done with some little success in the Continental Colonies of Australia and in New Zealand at a time when very large profits were made out of this industry in the Cape Colony and other South African States. The offer, however, was made subject to the financial safeguard of a Government guarantee, and failed to secure favourable consideration.

From observations of the habits of wild ostriches, and from some little experience of their management when domesticated, having owned birds myself, I venture to offer a few remarks on farming for feathers, and the possibility of such an industry being successfully carried out in Tasmania.

An observer of ostriches in their native state would imagine the task of bringing such birds under the subjection of man to be almost an impossibility. No wild creature of the plains is so difficult to approach, none are so timid or so fleet. The stratagems of natives or the well organised arrangements of professional hunters are required to ensure a successful chase. And yet their domestication has been comparatively easy, and now that their habits are well understood it is found that in confinement they can be bred and reared, and maintained as adult birds, with no appreciable loss of their natural characteristics.

Their chosen home is a waterless desert, with sparse and stunted vegetation, affording no shelter from the burning sun; their food small reptiles and animals, the young leaves and twigs of bushes, and the wiry grass and other small plants whose existence under such surroundings is always a mystery to travellers. The speed of the ostrich is a marvel of pace. Each stride, as has been verified by careful measurements, is from 22ft. to 28ft. One observer reports 30 strides of 12ft. each in ten seconds, or 26 miles per hour, which agrees with the estimate formed by Dr. Livingstone.

The male bird is an imposing creature, in height to the top of the head often 9ft. and even sometimes 10ft., thus exceeding any other existing species of aves. The neck is long and muscular, the head small, with a broad and depressed bill, eyes large and brilliant. The wings are hardly more than rudimentary, being useless for purposes of flight, the thighs

are exceedingly well developed, and are destitute of feathers, the legs and feet massive, the toes, two only in number, of unequal length. The body feathers in the male are deep black, the wing flights and tail feathers are, in strong contrast, pure white. The plumage of the female is a uniform brownish grey, but specimens are not infrequently met with having white wing and tail plumes, and I have seen domesticated birds of both sexes with spangled black or brown and white body feathers.

A peculiarity of an ostrich feather is that the quill is exactly in the centre of the webs instead of, as in the plumage of all other birds, more on one side than the other. This is accepted as the origin of their use as an emblem of justice in Egyptian hieroglyphics.

It appears that the geographical distribution of the ostrich was formerly much greater than at the present time, although even now its range is more extended than is generally supposed, including some parts of Asia, Arabia, and Northern and Southern Africa.

In a condition of nature ostriches are polygamous, and their nests, mere shallow depressions in the soil, are resorted to by several members of the same family, and in consequence the eggs they contain, laid at very varying intervals, are to be found at all stages of incubation. Contrary to a generally accepted belief the sun's rays are not depended upon to hatch out the chicks, the birds of both sexes taking turns of duty on the eggs. The hen bird lays every other day until some twenty or more are in the nest. The period of incubation is 42 days. The eggs are from 5 inches to 6 inches long, and 4 to 5 inches broad, weighing between 3 and 4 lbs., or of about 24 times the capacity of those of the common fowl; they vary in appearance in different countries, some being pitted all over with small dark coloured spots, others are a smooth creamy white, without blemish of any description, and resemble polished ivory. As an article of diet they are often of the greatest service, a large one, according to one writer, is said to furnish a meal for ten men. Hunters cook them in the shells placed on the embers of the camp fire, a hole knocked in the upper end, and the contents briskly beaten up with a forked stick during the operation. In puddings and custards they are frequently used by Ostrich farmers, and in this condition, as well as in the more primitive form, I have frequently had occasion to commend them as a welcome change in a very limited bill of fare. The shells, about 1/16th in. thick, are almost indispensable to the Bushmen of the Kalahari desert, for, filled with water, stores of them are buried for use on their return journeys from hunting expeditions or marauding forays, whilst pursuing parties, being unable to carry a sufficient supply, are unable to continue the chase.

Threaded on stout wire by which goods are suspended from the beams of store-houses, empty shells are an efficient precaution against injury by rats.

Prior to 1864, when modern experimental domestication commenced, the high prices ruling for feathers led to the indiscriminate slaughter of ostriches. In easily accessible districts they were soon exterminated, and there was occasion to fear that these interesting and valuable birds would soon become as extinct as their near connection, the Moa of New Zealand, and the enormous Æpyornis of Madagascar. But man's ingenuity and perseverance have counteracted the evil effects of his previous greed and destructiveness, and there is now no danger of so deplorable an event.

The author of the "Dominion of Man" shows that the settlers of South Africa are not the first Ostrich farmers, for in this, as in other instances, we find that the ancient Egyptians have been our predecessors. He states:—"On the monuments there are representations of ostriches which are under the dominion of man, and which are being handled in a manner which shows a thorough acquaintance with the character of the bird."

Rather less than thirty years ago the first attempt was made in the Cape Colony to keep ostriches in confinement with a view to profit. The feasibility of rearing their chickens artificially was soon demonstrated; the value of the new industry required no advertising; imitators of the original experimenters were numerous, and in a few years Ostrich farming was a firmly established resource of the Cape pastoralists. It was not necessary, however, to be a large landholder to commence operations, for breeding birds are always kept separate from the flock, each pair being enclosed in a camp or paddock of convenient size, varying in extent from five to forty acres, and chosen in a level locality, free from rocks, stumps, and holes. With rare exceptions domesticated birds are monogamous, but some difficulty often arises in inducing them to mate according to the desire of their owners. The hens are sometimes most capricious in their choice, whilst the males display absolute brutality towards unappreciated companions, and many changes are occasionally found necessary before satisfactory arrangements can be concluded. The breeding camps are enclosed by stone walls, thorn brush, or more frequently wire fences; and where a number of enclosures are together, the dividing fences must be double, with a space between of not less than 6ft. or 7ft., to prevent the male birds from fighting. A very slight enclosure suffices to confine ostriches at ordinary times, for they cannot step over a fence a yard high, but when frightened or enraged they rush blindly at any obstacle, and in consequence all enclosures must be secure.

During the nesting season the male is most pugnacious and may only be approached in safety with great precaution. He resents the intrusion of any visitors on his domain and proves a most formidable opponent. His mode of attack is by a series of kicks. The leg is thrown forwards and outwards until the foot, armed with a most formidable nail, is high in the air, it is then brought down with terrific force, serious enough to the unhappy human being or animal struck with the flat of the foot but much worse if caught and ripped by the toe. Instances are known of men being killed outright by a single kick, and I remember, whilst on a visit in the neighbourhood, that on a farm near Graaff Reinet a horse's back was broken by one such blow aimed at its rider. If attacked a man should never seek safety in flight ; a few yards and the bird is within striking distance and the worst consequences may result. The alternative is to lie flat on the ground and submit with as much resignation as possible to the inevitable and severe pummelling which it may be expected will be repeated at intervals until a means of escape presents itself, or the bird affords an opportunity of being caught by the neck, which if tightly held and kept down prevents much further mischief. Under such circumstances, however, I have known a bird with a badly calculated kick strike the back of its own head scattering the brains, a serious loss of valuable property to the farmer. It is, of course, an easy matter to break a bird's neck when in the position described, but at the time to which I refer the high price of birds prohibited such a mode of relief except under the most exceptionally dangerous circumstances. The early practice amongst farmers was to enter the camps protected with a long pole forked at the end. As the bird advanced his neck was received in the fork and his feet kept beyond striking distance; but as they soon learned to suddenly back out of the prongs and before a fresh defence could be arranged to rush the intruder, it has been the custom more recently to carry a small thorn bush at the end of a long staff, which, always kept at the level of the bird's eyes, proves a tolerably efficient protection. It is usual for two men to enter a camp together when any work has to be performed, one to act as guard.

Confined in such small enclosures ostriches require, of course, some artificial food; this generally consists of mealies, or Indian corn, and often the leaves of the prickly pear chopped into pieces. They are also furnished with a supply of pounded bones. It is usual to keep drinking water in the camps, but as to whether this is necessary opinions differ. Birds have been deprived of water for nine months, whilst those in an adjoining enclosure had an unlimited quantity, but there was no apparent difference in their condition or health.

As a first step towards domestic duty the male bird, in

confinement, scratches out a shallow depression in the ground, generally in some such unsuitable spot as the dry bed of an occasional water-course. The eggs vary to some extent in number, and on farms where natural nesting is preferred all over about twenty are removed.

There has been much difference of opinion as to the rival merits of leaving this process of hatching to the birds or saving them the duty by the use of incubators, but I am inclined to support the view that a larger percentage of chickens and stronger birds are secured by the former method. It is essential, however, that an incubator should be amongst the appliances of every ostrich farm for use in emergencies.

As in the wild state, the male performs an equal share of incubation with the female, who, being less conspicuous than her consort, remains on the eggs for the greater part of the day, the male sitting during the night, his turn of duty lasting from about four p.m. until early the next morning. At the proper hour the male grazes in the direction of the nest in an apparently indifferent manner until the hen, suddenly rising, runs some distance at a rapid pace, frequently changing her direction. At once he is on the eggs, and almost concealed, she having momentarily attracted the attention of onlookers. Much care is exercised by ostriches to conceal their nests, and it is surprising how inconspicuous the birds are when, surrounded by the low bushes of the veldt, they crouch over the eggs with their long necks extended on the ground.

It is not uncommon for one of the birds to refuse further duty at any stage of the hatching process, when the other, either male or female, may remain faithful to its instincts and, unaided, patiently complete the necessary period. The vitality of the embryo chick is remarkable. In my own experience I have in the early morning taken home eggs which had been exposed all night to a severe frost, and afterwards succeeded in hatching them in a box before the fire.

During natural incubation the eggs are liable to destruction by the many enemies of the ostrich, as are also the young birds for some time after hatching. Jackalls, baboons, hawks, and crows attack either eggs or chicks, whilst should an adult bird resent the appearance of a porcupine in its camp, it may be lamed for life by kicking against so efficiently armed an animal. It is no fiction that crows, unable to break and feast on the eggs by other means, pick up stones with their feet, and hovering perpendicularly over the nests, drop their missiles with destructive effect. They destroy tortoises in a somewhat similar manner: the reptile is itself raised into the air—a rock the target. What truth there may be in the assertion that a crow so encumbered cannot fly horizontally,

I am unable to say, but there can be no reason to doubt the many authorities who vouch for the above.

The young birds are at first about the size of domestic fowls, but in their markings resemble young partridges, with the peculiarity of having what appear like small porcupine quills mixed with the down on their bodies. If hatched naturally they must be removed from the camps within ten or fourteen days or they are liable to acquire wild habits prejudicial to discipline in their future artificial state of existence. For the first month or two the chicksare exceedingly susceptible to changes of temperature, they are carefully watched by day by the boy in charge (any male native of whatever age is a "boy") and they soon learn to know and respond to his warning cry. They are easily frightened, and at any alarm scatter in all directions, and after running a short distance, crouch, neck extended, on the ground, and so resemble their surroundings that an inexperienced eye might easily fail to detect them even if right in their midst. Dogs, from their liability to cause a panic amongst youngsters and annoyance to older birds, should never be seen on an ostrich farm. At night the chickens are housed in warm flannel-lined boxes placed in an artificially heated room. For a day or two after first seeing light they require little or no food, but make preparation for the serious business of life by taking in a supply of small pebbles to assist the digestive action of the gizzard. Their first sustenance consists almost exclusively of soft green stuff chopped into pieces of convenient size. Lucerne, rape, cabbages, etc., are the usual diet, with later, a liberal supplies of mealies (Indian corn), or they may be successfully reared on veldt which has been kept clear from other stock. At all times, however, young ostriches must be kept away from the plants of wild tobacco, which, if eaten, invariably prove fatal to them. The birds grow rapidly and in a month are as large as turkeys, and the down has disappeared, being replaced with rudimentary feathers. At six months old they require comparatively little attention, the head of the bird will now be as high as an ordinary man, and in a year nearly the full size is attained and the first crop of feathers is fully ready for cutting. A most amusing peculiarity of young birds is a tendency when let out from the kraal in the morning to dance wildly and rapidly in a circle, neck extended and wings opened, at first revolving slowly, afterwards with increasing pace until they gyrate in a most astonishing manner. Although adults in size at this age it is not for another two years or more that their reproductive instinct appears to be developed.

Feather cutting is presumably the most important operation on a farm. The process is by no means cruel, and entails far more discomfort to the men employed than to the

birds themselves. A small yard or enclosure is so closely packed with ostriches that they are quite unable to move and their only means of defence, by kicking, is prevented. A man can then go amongst them with impunity, and spreading in turn the wings of each bird with a small pair of self-opening garden nippers, he severs the quills of two or three feathers at a time, passing the plumes as cut to his assistant. The first row of the wing flights of the male bird, about 24 in number, are pure white, as also are the second and sometimes the third rows, but those with grey or brown edges are remarkably handsome, and all, even the small body feathers, are marketable. After being some time in the yards the birds becoming used to their surroundings peck persistently at any shining object, and frequently at the ears of the operators: all studs, bright metal buttons, etc., should be removed before commencing such work. One peck is a trifling circumstance, but many repetitions of it on the same spot occasion considerable pain: sore ears for some time afterwards has invariably been my experience after a day in the yards. In addition to this the birds swarm with vermin, which does not enhance the pleasure of the work. Sometimes it may be found impossible to get a male bird of savage disposition into the clipping pen, and then, and then only, is the practice of pulling the feathers resorted to, for he must be caught and held whenever a favourable opportunity presents itself. He may perhaps expose his neck to be seized and held fast over a fence, a second man can now approach from behind and pluck the feathers, returning to a place of safety with as much expedition as possible.

Most of the profit made in the earlier days of ostrich breeding was by the sale of young birds for stocking other farms. The prices realised were astonishing, and well paired mature birds could hardly be purchased except at prohibitory rates. In 1881 chickens, as soon as hatched, sold for £5 a-piece; at three months old, for £10; and at 12 months, for £20 or £30. At one sale thirteen lots of mated birds, some of which had commenced laying, realised from £125 to £220 per pair. These were from six to eighteen years of age. One exceptionally prolific pair were considered by their owner to have been worth quite £400 a year to him for several years in succession; for they reared four broods of chickens in thirteen months, all of which found a ready market at £10 per head. Feathers, of course, vary in value exceedingly, according to quality, and are subject to great fluctuations in price. In the halcyon days of this description of farming the best blood feathers, of which about 120 weigh 1lb., were worth from £40 to £60 per lb., or more than their weight in gold, and a domesticated adult bird yielded each year a crop worth nearly £20.

A peculiar blemish is often observed in ostrich feathers procured from tame birds, which is known as the "hunger streak." It appears, according to the authors of "Ostriches and Ostrich farming," as a line of imperfection across the web of each feather, chiefly in those of the wings, while on the shaft the mark may not only be seen but felt as a slightly projecting ridge. The injury from this cause is sometimes such as to occasion the feathers to break off." "It occurs most frequently in time of drought, when the birds are unable to procure their natural diet, and have to be fed on maize, or such other dry food as is most easily obtainable. This produces an unhealthy condition of skin, and experience has shown that the remedy lies in the cultivation of prickly confrey, which not only withstands droughts well, but furnishes the birds with excellent food well suited to their requirements.

Feathers require no preparation for sale except washing and careful classification. Of the different grades sorted for the London market those from wild birds rank first, then white tame feathers, the best only worth half as much as prime specimens of the former, followed by others known as feminas, byoks, boos, blacks, etc.

To preserve wild feathers from risk of injury, hunters and traders, during their rough and prolonged journeys in the interior of South Africa, used at one time to insert each valuable plume into a hollow reed. The end of the quill was first introduced, and by repeated tapping the whole feather gradually disappeared, the webs lying upright alongside the shaft. With the ends of such reeds securely sealed no harm could result.

There were only 80 tame ostriches in the Cape Colony in 1865, and the feathers exported weighed 17,522lbs., valued at £65,736, the whole of which, except 120lbs., were from wild birds. In 1875 the number domesticated was no less than 32,247, and the exports were valued at £304,933 for 49,969lbs. In 1882 exports reached the highest value they have ever yet attained, viz.: £1,093,989 for 253,954lbs., and since 1886, when the export was 288,568, valued only at £546,230, the yield has steadily decreased. The number of domesticated ostriches in the colony is now about 160,000. In twenty years the average price for all South African exports of feathers has fluctuated from 70s. to 110s. per lb.

It is evident, then, that the supply has exceeded the demand, the enormous profits made by the sale of young birds will never more be realised, and it is hardly to be expected that feathers will ever again be quoted at the old market rates. But there should still be substantial recompense to be earned in the country where they are indigenous by an ostrich farmer managing his property with skill and intelligence, and

in spite of a certain amount of risk attached to the industry, it should be equally as attractive as sheep farming. The danger of allowing the free removal of birds and eggs to other countries was long ago recognised by the Government of the Cape Colony, for, in 1883, they imposed an export duty of £100 on every bird, and £5 on each egg. Before this, however, several shipments of ostriches had been forwarded to India, California, the River Plate district, and to the Australian Colonies, and it has been made evident that feather farming may be followed with some amount of success in all these countries. In fact any land with a dry and temperate climate, having level wastes, may be found suitable for this industry.

Tasmania, however, is less adapted for the purpose than any of the neighbouring continental colonies, or than parts of New Zealand. Wooded, hilly or uneven country is quite unfitted for farming ostriches and grassy plains are found to furnish an insufficient variety in diet. Climate has also to be taken into consideration and even in the dry Wimmera district of Victoria rheumatism and cold have proved very destructive amongst the birds kept there.

Further, the statistics of Australasia offer little encouragement to introduce ostriches here. In South Australia, where they have been kept for many years, the total number of birds is, at the present time, only 725. In Victoria, where it is nearly 20 years since Sir Samuel Wilson carried out experiments at Longernong the increase is insignificant, and in New South Wales and New Zealand there are only small flocks.

But more cogent reasons still for deprecating their acclimatisation in Tasmania are to be found in the existing state of the industry in South Africa, where full-grown birds can now be purchased for from £3 to £4 each, or about the value of their feathers at the current rates. Strayed birds, barely worth the trouble and expense of recovery, become in certain districts a cause of much annoyance and even danger to persons travelling, so that it is considered unsafe to go out except when armed with a gun, and the state of affairs has been found sufficiently important to warrant the appointment of a select committee of the House of Assembly in the Cape Colony, who in their report dated 4th July, 1889, recommended the repeal of the Acts of 1870 and 1875, which imposed severe penalties for interference with wild birds or their eggs, and advocated perfect freedom for their destruction on private property and liberty to anyone to shoot them on Crown Land on payment of £5 for a license.